



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

Application No.: 10/014,711

Filing Date: December 11, 2001

Applicant: Michael Jeffrey Agnes et al.

Group Art Unit: Unknown

Examiner: Unknown

Title: BRUSHLESS MOTOR HAVING DOUBLE INSULATION

Attorney Docket: 0275L-000527

#6
Takao
5/10

TECHNOLOGY CENTER 2800
APR 16 2002
RECEIVED

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION

The patents, publications and other information submitted for consideration by the Office (except unpublished U.S. patent applications) are listed on Form 1449 attached hereto.

II. COPIES

A. Submitted herewith is a legible copy of (i) each U.S. patent application publication and U.S. and foreign patent; (ii) each publication or that portion which caused it to be listed; (iii) for each cited pending U.S. application, the application specification including the claims, and any drawing of the application which caused it to be listed including the claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

B. Any patents, publications or other information which are listed on Form 1449 or on the copies of PTO-892, but which are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Serial Number

U.S. Filing Date

C. This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search Report are listed on the attached Form-1449 for consideration by the Examiner and for listing on any patent resulting from this application. Since the International Search Report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g))

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A. Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B. A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1. See the attached foreign patent office communication from a counterpart foreign application:
2. English translations are provided for:
3. Other: See below

DE 35 14 684 C2 (Wilhelm Pollmeier GmbH & Co Maschinenfabrik) which was filed on April 24, 1985 and first published on November 14, 1985 describes in general an isolated electric motor. The electric motor 1 is surrounded by an isolated housing 2. Further, the rotor shaft 4 of the motor 1 passes through an aperture 3 of the housing 2. The external part of the motor shaft 4 is provided with an insulation sleeve 5 having a closed front wall 6. The insulation sleeve 5 extends through said aperture 3, and the inner part of the sleeve 5 (inside the housing) is provided with a flange 7. finally, a drive wheel 9 is mounted on the sleeve. Therefore, the (metal) drive wheel 9 is isolated against the rotor shaft 4.

DE 43 04 709 C2 (Mitsubishi Denki K.K.) (corresponds to US 5,350,960) which was filed on February 16, 1993 (claiming priority of February 17, 1992) and which was first published on August 19, 1993, describes an electric motor which, according to claim 1, comprises a stator (5, 6, 10) having a plurality of radially arranged magnetic pol pieces (7) between which grooves are provided, in which grooves windings (26) being formed, a rotor (17) for rotation within the stator, an insulation arrangement (11, 13) for covering the pol pieces (7), and an insulation cover (19) for covering a part of the front surface of the rotor (17), characterized in that the insulation cover (19) having projecting winding columns (20), by means of which the windings can be arranged in a manner that

they extend above a part of the front surface of the rotor when leaving the grooves (8).

DE 43 38 913 C2 (Vacontec) (corresponds to US 5,727,307) which was filed on November 15, 1993 and which was first published on May 18, 1995, describes in general a method for manufacturing an armature for an electric motor. As shown in figures 13 and 14, the armature comprises a shaft 1, a first plastic tube 37 between the rotor shaft 1 and the bundle of laminations 2, and a second plastic tube 39 between the rotor shaft 1 and the commutator 25. Further, a plastic filling 19 is provided around the rotor shaft 1, in the grooves of the bundle of laminations, and between the bundle and the commutator unit 25. Therefore, a double isolation is achieved. Claim 1 relates to the method for manufacturing an armature for an electric motor having a commutator unit 25 connected with the windings of the bundle of laminations, in particular providing the plastic filling. Merely claim 12 relates to the first plastic tube 37.

DE 38 25 035 A1 (Flux-Geräte GmbH) (corresponds to US 5,073,736) which was filed on July 9, 1988 and which was published on January 11, 1990, describes a brushless electric motor for a pump. In the introductory part of the description (column 1, lines 28 to 30), it is mentioned that in general a motor for a pump has to be provided with a double insulation to prevent explosions. However, when using a brushless motor the risks of explosions is reduced because in a brushless motor no coal dust is produced which usually leads to leak current. Further, the motor is enclosed in a sealed housing, with the electronic components for controlling the motor are also enclosed within the housing. Claim 1 relates to a motor for a pump, in particular a barrel pump, having preferably a pressure sealed housing, in which a rotor having a rotor shaft being rotatably journaled, a stator being arranged within the housing and surrounding the rotor, and a power supply line connected to a switching unit, characterized in that the motor being a electronically commutated brushless DC motor, the switching unit thereof being a switching electronic (20) arranged within the housing (1).

DE 199 44 686 A1 (Hung et. Al.) (corresponds to US 6,137,206) which was filed on September 17, 1999 and which was published on March 29, 2001, describes in general a shaft arrangement for an electric motor. In a known motor, a plastic sleeve 42 is provided between the rotor shaft and the bundle of laminations. However, because of excessive forces between the rotor shaft and the bundle of laminations, such an insulation sleeve can not be used in high power motors. Therefore, the shaft is provided with grooves 15 (see figures 2 and 3) to improve the connection between the sleeve (insulation layer 13) and the rotor shaft 11. Further, the sleeve 13 is provided with ribs 20 to improve the

connection between the sleeve 13 and the bundle of laminations 12. Claim 1 relates to such a rotor having a rotor shaft 11, a bundle of laminations 12, a one-part insulation layer 13 between the rotor shaft 11 and the bundle of laminations 12, two star-shaped plates 14 located at the bundle of laminations for clamping the laminations 12 at both ends, grooves 15 formed on the surface of the rotor shaft, and ribs 20 formed on the insulation layer 13 for reinforcement of the connection between the layer 13 and the plates 14.

DE 100 44 310 A1 (Spiel, Robert) which was filed on September 7, 2000 (claiming priority of September 28, 1999) and which was published on March 29, 2001, describes a generator with a protective insulation. As can be seen from the figures, all parts of the generator are surrounded by a plastic insulation 26. However, there is no insulation between the shaft and the bundle of laminations.

EP 0 729 665 B1 (Vacontec) which was filed on November 10, 1994 (claiming priority of November 15, 1993) and which was first published on September 4, 1996, describes in general a synchronous electric motor which is protected by a double insulation.

C. ___ The following additional information is provided for the Examiner's consideration.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A. ___ The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. § 122.

<u>Serial No.</u>	<u>Filing Date</u>	<u>Art Unit</u>
-------------------	--------------------	-----------------

V. THIS IDS IS BEING FILED UNDER

A. X 37 C.F.R. § 1.97(b): (check only one box)

1. ___ within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.

2. within three months of the date of entry of the national stage as set forth in §1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.

3. before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below; or, if no certification has been made, charge our deposit account a fee in the amount of \$180.00 as required by 37 C.F.R. § 1.17(p).

4. before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B. 37 C.F.R. § 1.97(c): (check only one box)

- before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1. No certification; therefore, a fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

2. See the certification below. No fee is required.

C. 37 C.F.R. § 1.97(d):

- after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1. See the certification below. A fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e): (check only one box)

The undersigned hereby certifies that:

A. each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)). See further statement under 37 C.F.R. 1.704(d) below in section VII, if applicable; or

B. no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).

C. Some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. STATEMENT UNDER 37 CFR 1.704(d)

The undersigned hereby states that:

each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. 1.56(c) more than thirty days prior to the filing of this IDS.

VIII. PAYMENT OF FEES (check only one box)

A. A check in the amount of \$180.00 is enclosed for the above-identified fee.

B. Please charge Deposit Account No. 08-0750 in the amount of \$180.00 for the above-indicated fee. A duplicate copy of this paper is attached.

The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 08-0750.

Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 08-0750.

Respectfully submitted,

Dated: April 9, 2002

By: Mark D. Elchuk
Mark D. Elchuk
Reg. No. 33,686

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

2834

Please type a plus sign (+) inside this box →

APR 15 2002



TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/014,711
Filing Date	December 11, 2001
First Named Inventor	Michael Jeffrey Agnes et al.
Group Art Unit	unknown
Examiner Name	unknown
Attorney Docket Number	0275L-000527

ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Assignment Papers (for an Application)	<input type="checkbox"/> After Allowance Communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment / Response	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	Form 1449 with copies of cited References; postcard
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	RECEIVED TECHNOLOGY APR 16 2002 2800
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application	Remarks	The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 08-0750. A duplicate copy of this sheet is enclosed.
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name Mark D. Elchuk	Reg. No. 33,686
Signature			
Date	April 9, 2002		

CERTIFICATE OF MAILING/TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, or facsimile transmitted to the U.S. Patent and Trademark Office on the date indicated below.

Typed or printed name	Mark D. Elchuk
Signature	
Date	April 9, 2002